THIRD SPACE LEARNING

28 Math Problems For 2nd Graders

28 2nd Grade Math Problems With Answers And Worked Examples

2nd grade

How to use this resource

Here is a collection of second grade math problems organized by concepts, including math word problems and reasoning problems. Each problem has an answer key, a worked example and a detailed explanation of how to answer the question.

These are suitable for use as:

- Additional practice before an assessment
- A Do Now activity
- An Exit Slip to check for understanding after a lesson

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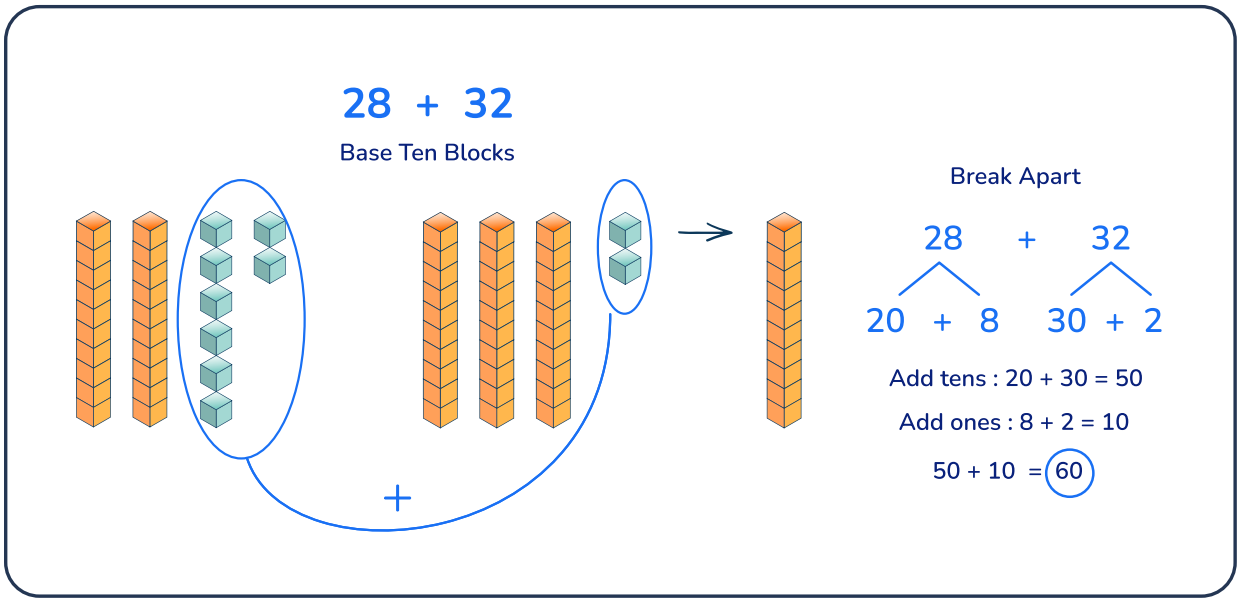
Addition and subtraction (2-digit numbers)

1. 28 + 32 = _____

Answer:
○ 60

2nd graders learn that ten ones make one ten. In this problem, students must see that 8 + 2 = 10 which means one ten goes in the tens place and there aren't any ones remaining in the ones place.

Using a base-ten block model is a helpful way to show what is happening in this problem. Alternatively, students may break down both numbers using place value.



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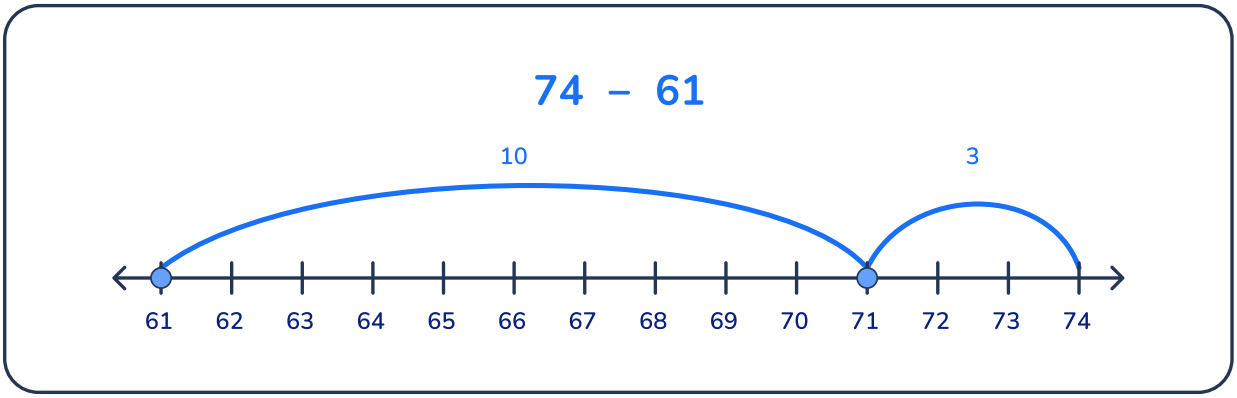
Addition and subtraction (2-digit numbers)

2. 74 - 61 = _____

Answer:

- 13

Students can solve this problem using the traditional digit subtraction method. However, since the numbers are relatively close, they could also count on from 61 on a number line to find the difference between 74 and 61.



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Addition and subtraction (2-digit numbers)

3. 18 + _____ = 30

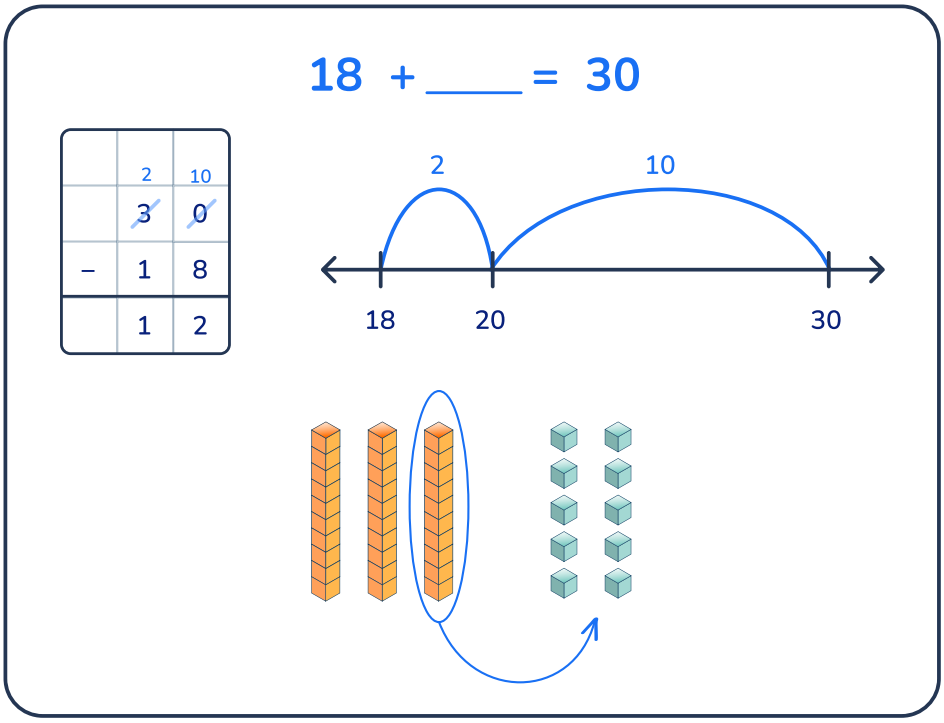
Answer:
○ 12

This problem is designed as a missing addend problem. To solve this problem, students must use a subtraction strategy to find the difference between 30 and 18.

Missing addend problems help students connect subtraction to addition and encourage them to add on from the lower number.

In this case, students could subtract using the traditional standard algorithm, however, they would need to rename 30 ones as 2 tens and 10 ones. You can support this new concept in 2nd grade with base ten blocks. Adding on from 18 is likely more efficient for this particular problem.

Additionally, the unknown being to the left of the equal sign could confuse students so it is important to emphasize the meaning of the equal sign to prevent this misconception.



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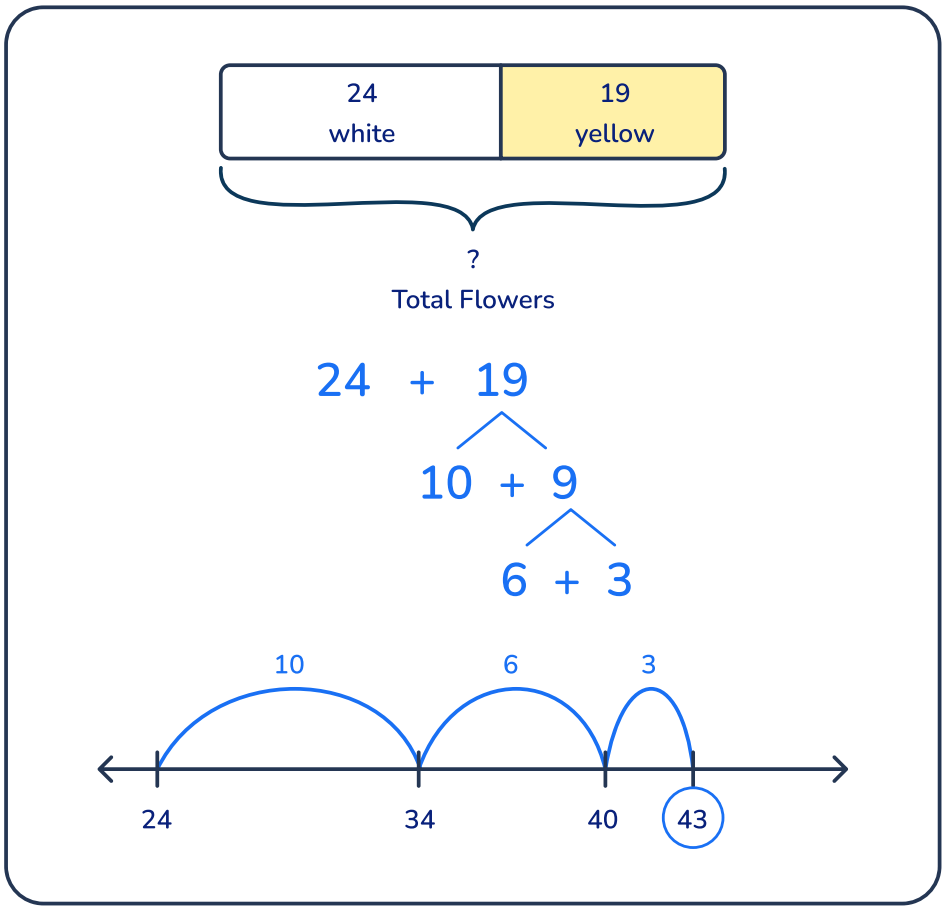
Addition and subtraction (2-digit numbers)

4. Nadia had 24 white flowers and 19 yellow flowers growing in her garden. How many flowers did Nadia grow in her garden in total?

Answer:
○ 43 total flowers

Drawing a visual model or using a story problem graphic organizer are great ways to build understanding of math word problems.

This problem is a part-part-whole problem so a bar model or tape diagram is a great way to visualize the unknown in the problem. Then students can use an addition strategy such as breaking apart one addend to solve.



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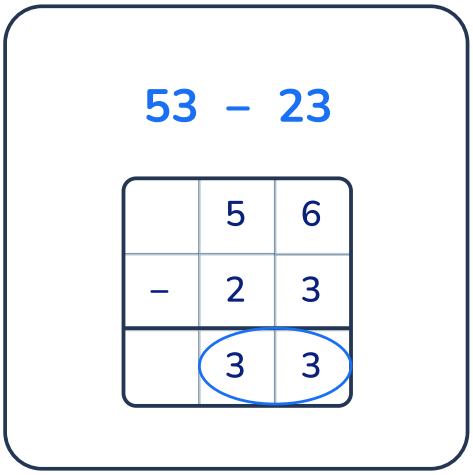
Addition and subtraction (2-digit numbers)

5. There were 56 people at the swimming pool. 23 people left the pool after lunch. How many people were still at the pool after lunch?

Answer:
○ 33 people remained at the pool

This is a traditional separate, result unknown problem. Because there is the action of 23 people leaving, it is easier for students to visualize the subtraction.

The traditional standard algorithm is a good method to solve this problem without any regrouping. Students can use base ten blocks to support their understanding as needed.



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Place value (3-digit numbers)

6. On Saturday, 346 people went to the carnival. On Sunday, 432 went to the carnival. On which day did more people go to the carnival?

Answer:

- On Sunday more people went to the carnival because 432 is greater than 346

Students can solve this problem by breaking down the numbers by place value, or by writing them in a place value chart and comparing starting with the largest place value first. Learner will notice 4 hundreds is more than 3 hundreds so 432 is greater than 346.

Hundreds	Tens	Ones
3	4	6
4	3	2

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Place value (3-digit numbers)

7. Compare the following two numbers using the greater than, less than and/or equal to symbols (>, <, =)

   624_____398

Answer:
○ 624 > 398

Writing both numbers in expanded form helps students compare the values. Even though 398 has a larger number in the tens place and in the ones place, it has fewer hundreds than 624. Therefore 624 is greater than 398.

600 + 20 + 4

300 + 90 + 8

600 > 300

so

624 > 398

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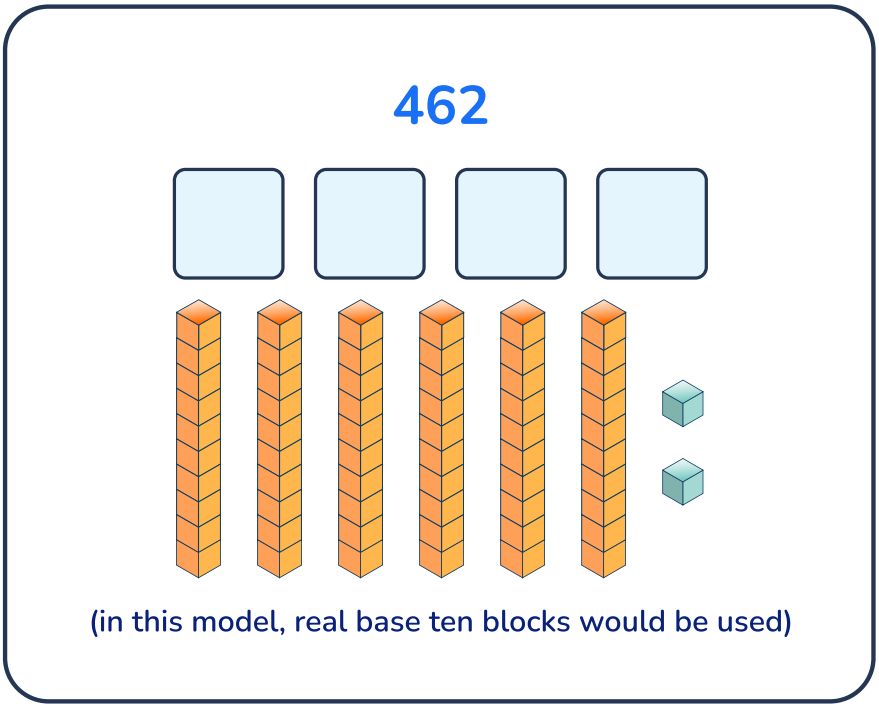
Place value (3-digit numbers)

8. How many hundreds are in the number 462? Explain your thinking.

Answer:

- 4 hundreds

Building a number using base ten blocks is a concrete method for students to understand the number of hundreds, tens and ones in a number. Using base ten blocks or a quick picture helps students see there are 4 hundreds in the number 462.



(in this model, real base ten blocks would be used)

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Place value (3-digit numbers)

9. Write the number 684 in expanded form.

Answer:
○ 600 + 80 + 4

Writing answers in the expanded form is straightforward. Students should break up the number using place value.

A place value chart can help to organize student thinking when breaking up the numbers. As an additional challenge, students can write this number as 680 + 4 or 600 + 84.

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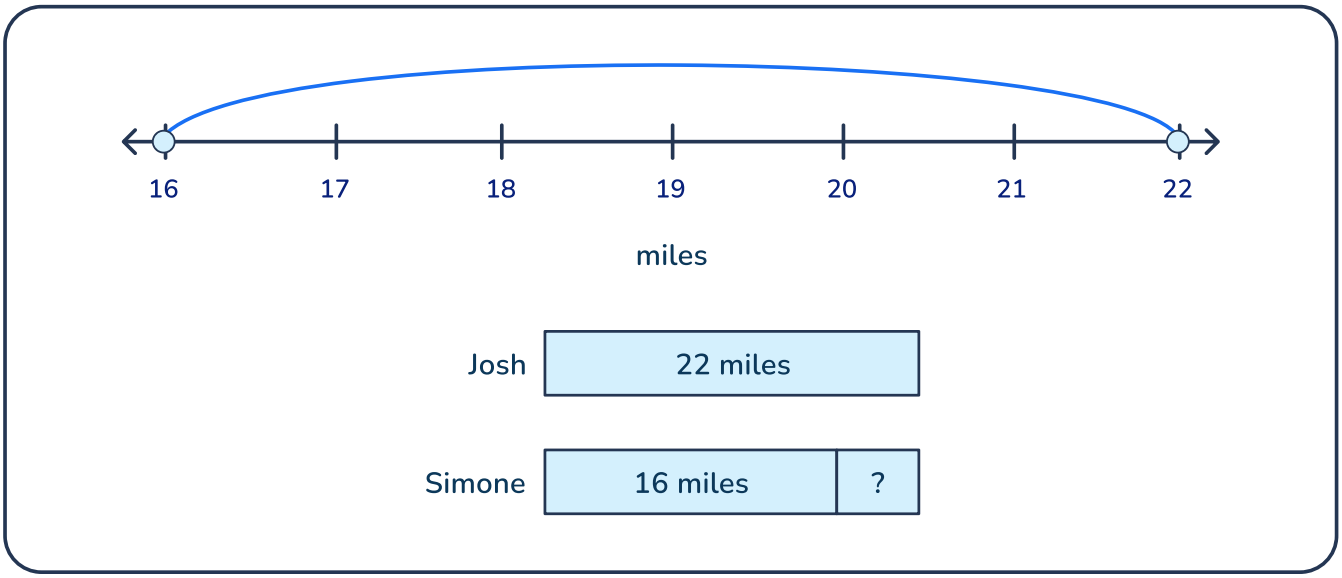
Measurement: Problem solving and word problems

10. Josh and Simone were training for a marathon. Josh ran 22 miles on Saturday. Simone ran 16 miles on Saturday. How many more miles did Josh run than Simone on Saturday?

Answer:
○ 6 more miles

Learners can solve this problem by counting on from 16 to 22 or subtracting back from 22 to 16. Students may also use a standard algorithm although it would require regrouping and might be less efficient.

Using a number line or bar model is a helpful visual for students to understand that in this problem they need to find the difference between 16 and 22.



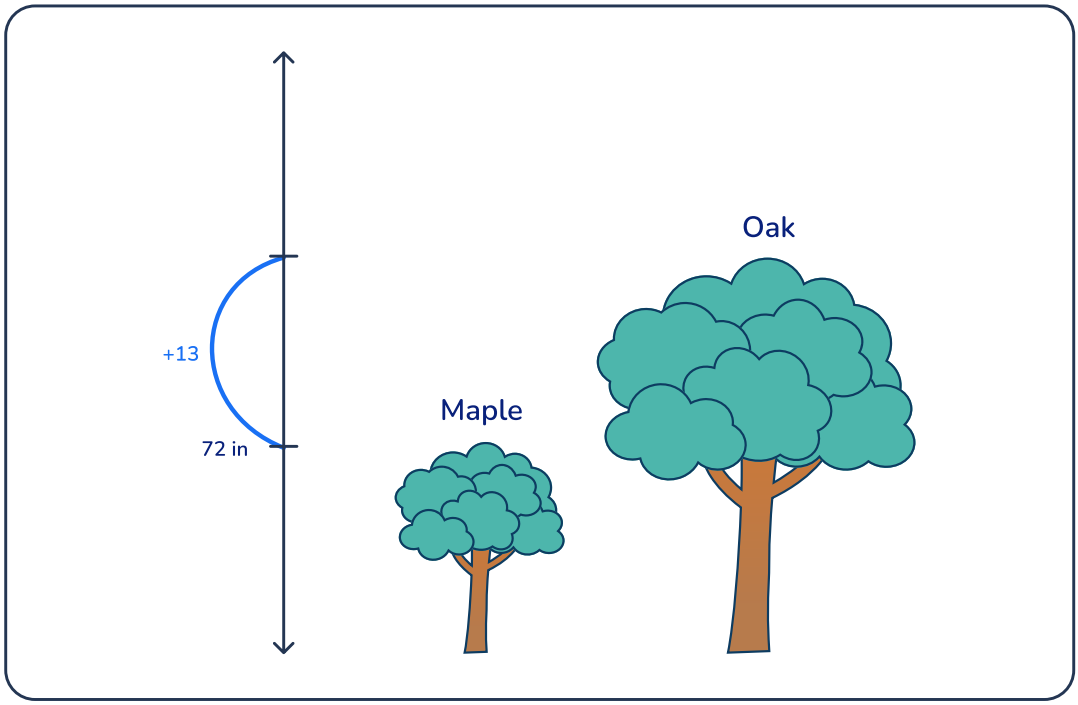
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Measurement: Problem solving and word problems

11. The maple tree is 72 inches tall. The oak tree is 13 inches taller than the maple tree. How tall is the oak tree?

Answer:
○ 85 inches tall

Measuring height is a context that second graders often see in measurement problems. Using a vertical number line is a helpful visual model for students to recognize that they are adding 13 to 72 in this word problem. Then they can choose a solution strategy to find the sum.



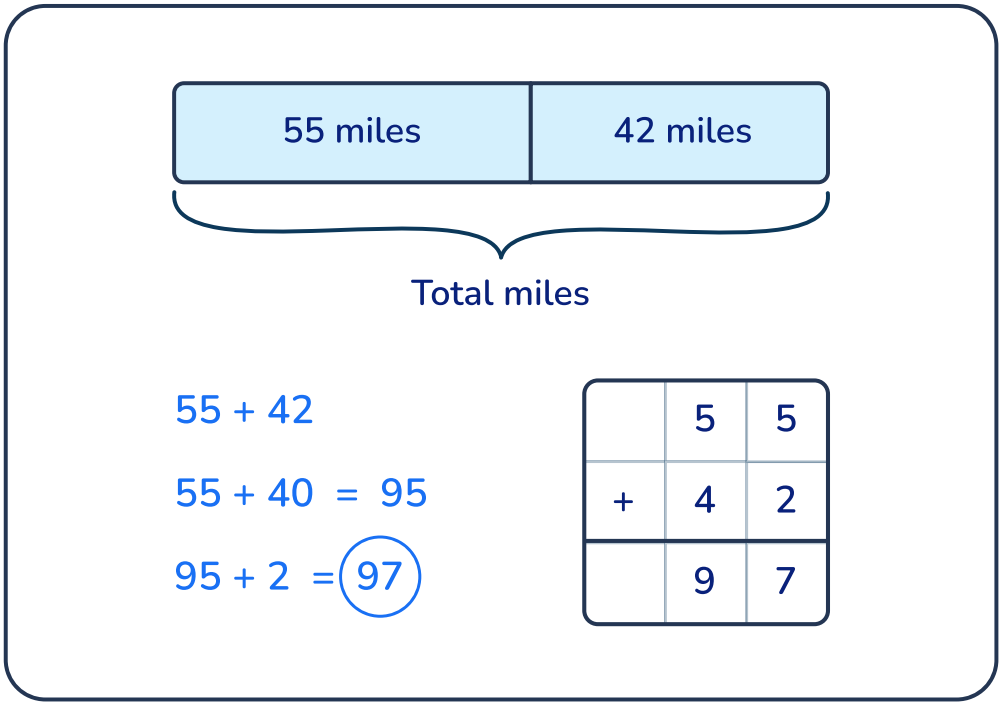
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Measurement: Problem solving and word problems

12. The Rodrigo family went on a road trip. In the first hour, they drove 55 miles. In the second hour, they drove 42 miles. How many miles did the Rodrigo family drive in the first two hours of their trip?

Answer:
○ 97 miles

In this math word problem, learners could use a bar model to visualize adding 55 and 42. They can then choose a strategy to find the sum, such as adding with place value or breaking apart one addend.



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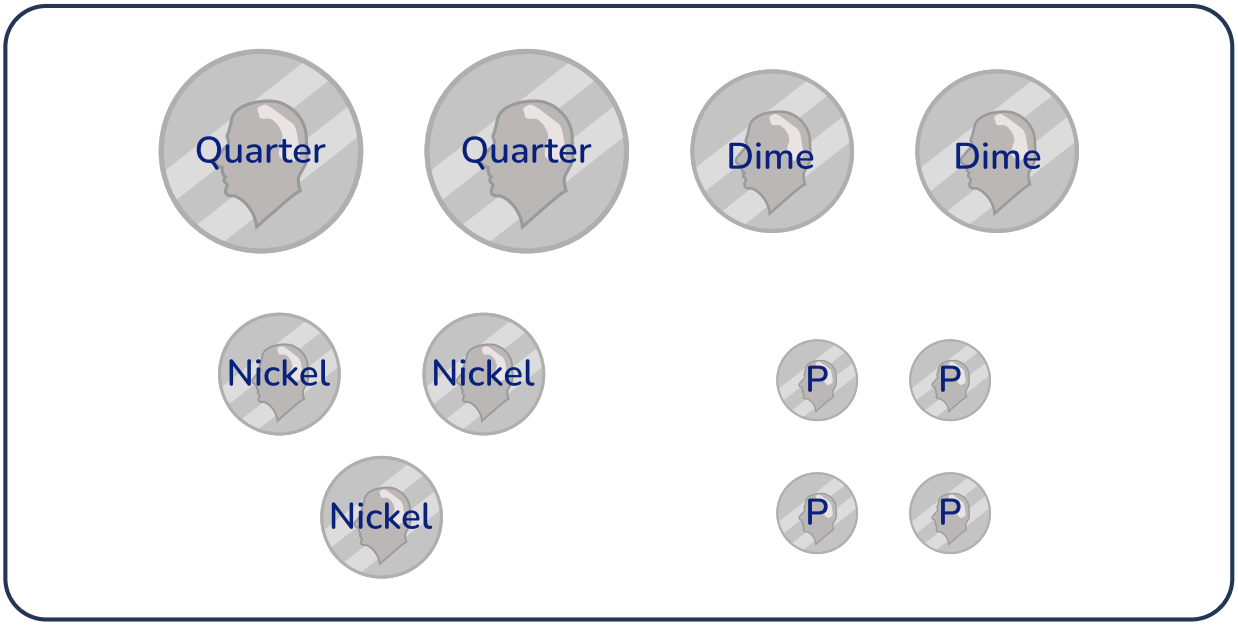
Money

13. The picture below shows how much money my sister has in her piggy bank. How many cents does my sister have in her piggy bank?

Answer:
○ 89 cents

To add the value of the coins together, students should find the total value of all the coins of one type first, or find ways to make ten.

In this case, they would see that there are 2 quarters (50 cents), 2 dimes (20 cents), 3 nickels (15 cents) and 4 pennies (4 cents) so a total of 89 cents.



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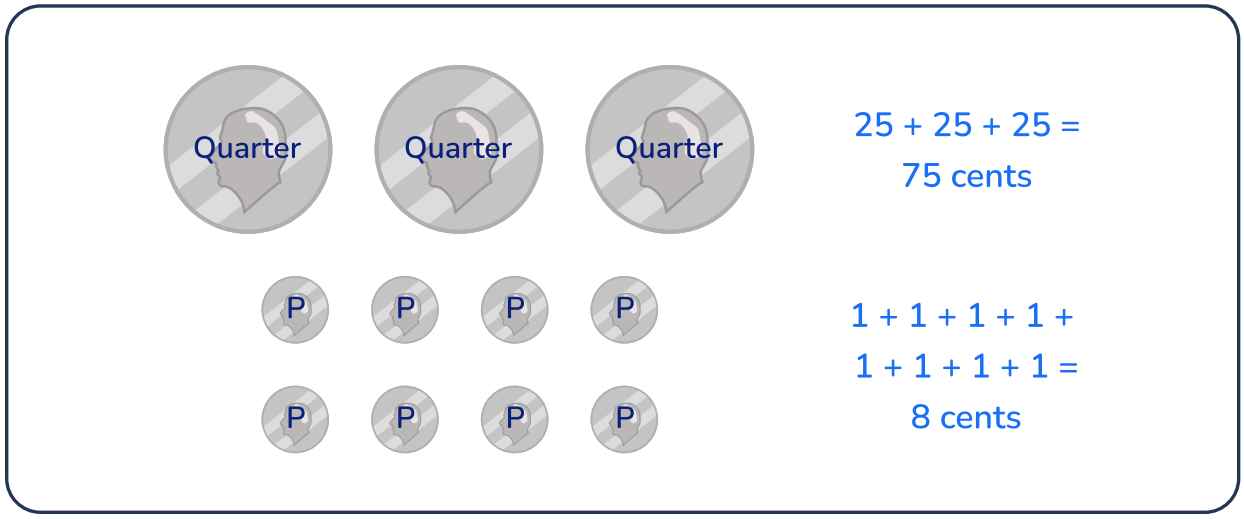
Money

14. William has 3 quarters. Margaret has 8 pennies. Who has more money? Explain.

Answer:
○ William has more money because 75 cents is more than 8 cents

This problem is challenging for students because the number 8 has a larger value than the number 3. Students should label their work and use real coins where possible to build meaning.

Skip counting or repeated addition can help students see William has 75 cents and Margaret has 8 cents.



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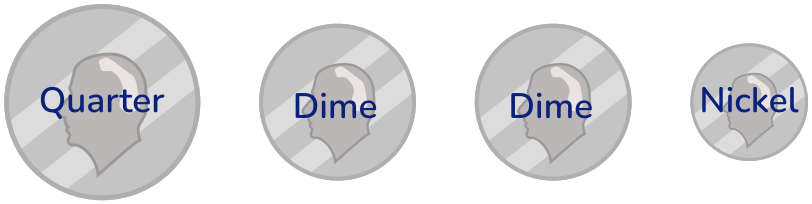
Money

15. Mr. Hopkins had a lemonade sale. He sold 2 cups of lemonade and got 1 quarter, 2 dimes and 1 nickel. How much money did Mr. Hopkins make from selling 2 cups of lemonade?

Answer:
○ 50 cents

Writing an equation to match a hands-on model with coins or a pictorial model with labels is a great way for students to visualize which numbers they are adding.

At the second grade level, students do not necessarily write these numbers as decimals since they don't add decimals until 4th and 5th grade. However, teachers can address what these numbers would look like if we wrote them using decimal notation.



25 + 10 + 10 + 5 = 50 cents

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Reading digital and analog clocks

16. What time is shown on the analog clock below? Write your answer in digital clock format.

Answer:
○ 4:40

As 2nd grade students learn about clocks, they must realize that the hour hand moves throughout the hour as well as the minute hand.

In this situation, the hour hand is closer to 5 than 4 because it is past the half hour. Practicing with hands-on clocks helps children understand this concept.



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Reading digital and analog clocks

17. Lucy's dance class starts at 5:15pm. Circle the clock that shows the time her dance class starts.

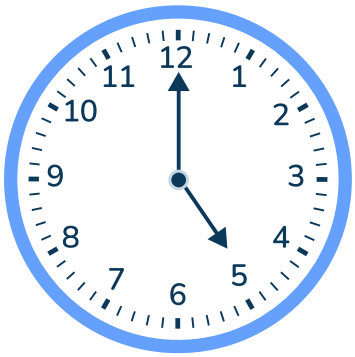
a



b



c



d



Answer:

○ B

Students must recognize the short hand as the hour hand and the long hand as the minute hand. Many students may confuse D as the correct answer when it shows 5:12.

Teachers can facilitate connections between digital and analog clock times using a visual timeline or schedule throughout the day.

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Reading digital and analog clocks

18. Lee woke up earlier than Timothy. If Timothy woke up at 6:00am, what time could Lee have woken up? Choose from the digital 24-hour clocks below.

a 

b 

c 

Answer:

○ C

The concept of earlier and later is a fairly new concept for 2nd graders when considering time. Math problems like this prepare students for elapsed time problems in 3rd grade.

In this problem, students must recognize that 5:00 am comes before 6:00 am, therefore 5:45 am is earlier than 6:00 am.

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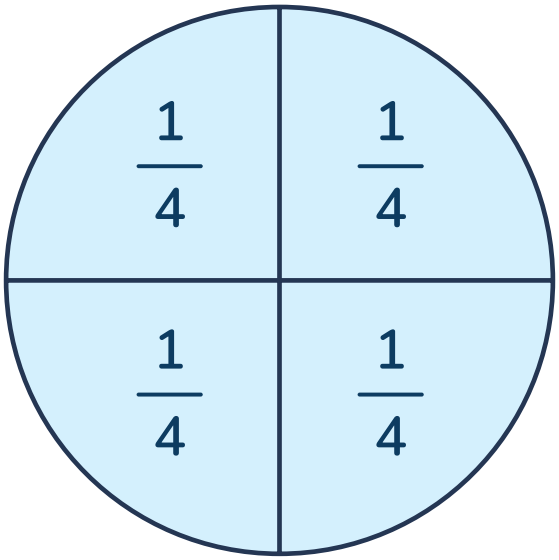
Fractions

19. If 4 friends share a pizza and each friend gets an equal share, what fraction of the whole pizza does each friend get?

Answer:
○ $\frac{1}{4}$ of the whole pizza

Using visual models that students can draw on, cut and fold is critical for building a conceptual understanding of fractions.

Children should fold a circular piece of paper or draw a circle and 'cut' it into fourths by drawing lines. They may also physically model it using a real pizza or play pizza. The aim is to connect the vocabulary of 'one-fourth' when sharing something equally with 4 people.

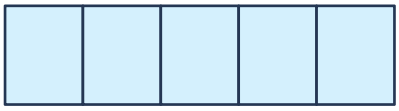


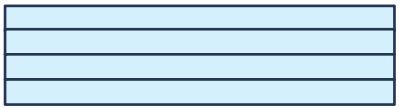
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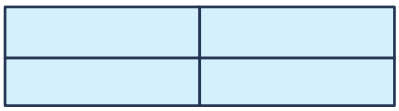
Fractions

20. Which models below show a rectangle being partitioned into fourths? Select all that apply.

a 

b 

c 

d 

e 

Answer:

- A,C,D

This math problem shows students that rectangles and other shapes can be partitioned in multiple ways.

As long as the size of the 4 pieces are equal, all three of these models represent a rectangle partitioned into fourths.

If students answer B, they might not understand how to draw fourths. This misconception indicates that they think drawing 4 lines partitions into fourths, rather than fifths.

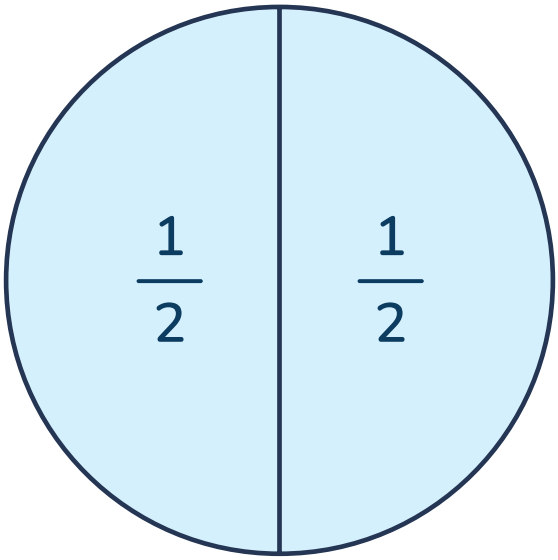
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Fractions

21. If you slice a pie down the middle so that each side is the same size, what fraction of the whole pie is each side?

Answer:
○ One half or $\frac{1}{2}$

Emphasizing the same-size parts is important for setting the foundation for fraction concepts in third grade and beyond. Because of this, 2nd grade fraction concepts focus heavily on vocabulary and equal shares.



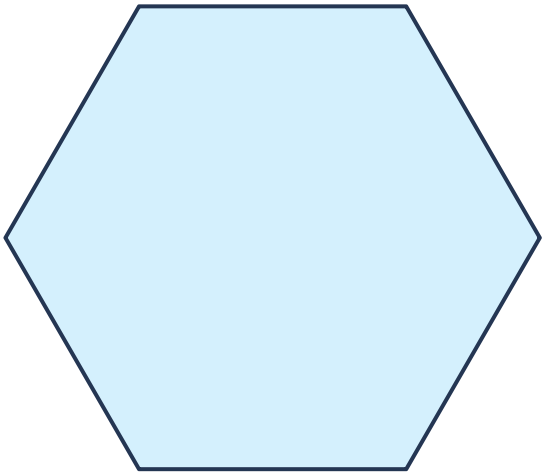
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Geometry

22. Draw a closed shape that has 6 sides. What is the name of the shape?

Answer:

- Drawings may vary but should all have 6 sides and 6 angles. This shape is called a hexagon.

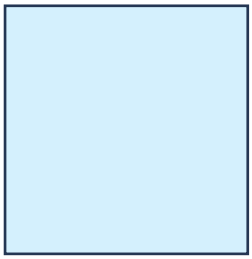


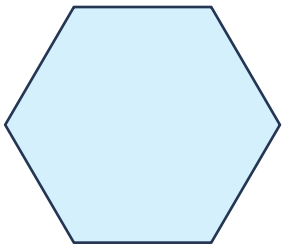
Hexagon

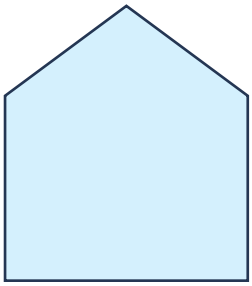
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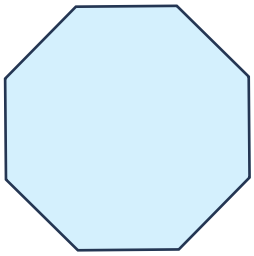
Geometry

23. Which shape below is a pentagon? Explain how you know.

a 

b 

c 

d 

Answer:

○ C

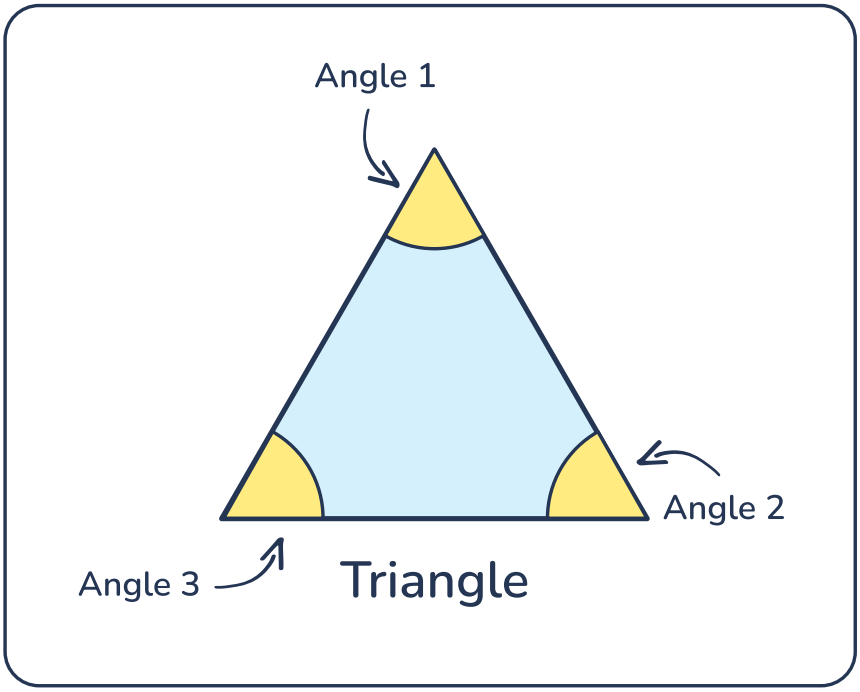
A pentagon has 5 sides and shape C is the only 5-sided figure.

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Geometry

24. What is the name of a shape with 3 angles? Draw a picture of this shape.

Answer:
○ Triangle



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Geometry

25. Draw a quadrilateral. How many angles are in a quadrilateral?

Answer:

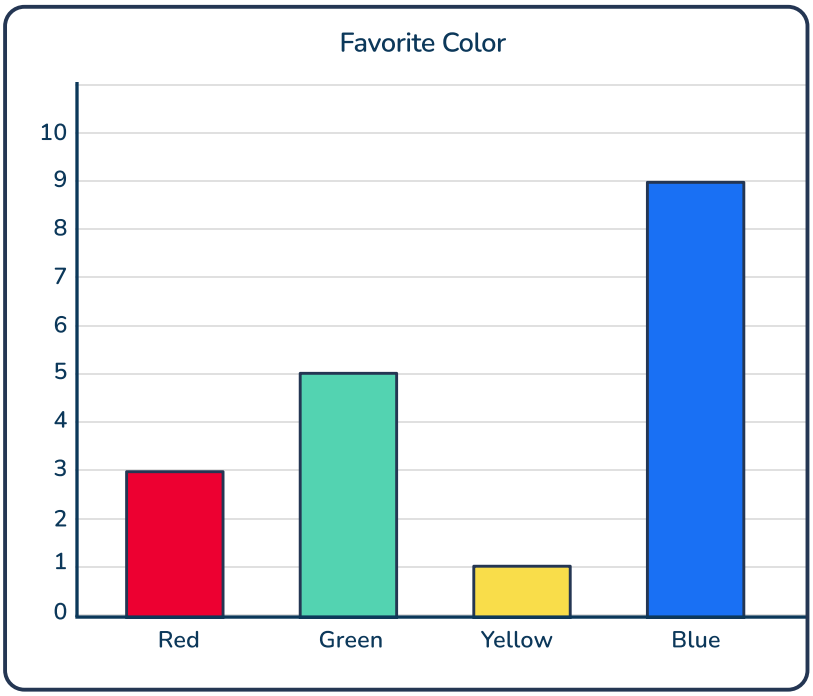
- Drawings will vary but should be closed 4-sided shapes. There are 4 angles in a quadrilateral.



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Bar graphs

26. In a class survey, the students in Mrs. Nielsen's class voted for their favorite color. The data is represented in the bar graph below. How many more students voted for blue than voted for green?



Answer:

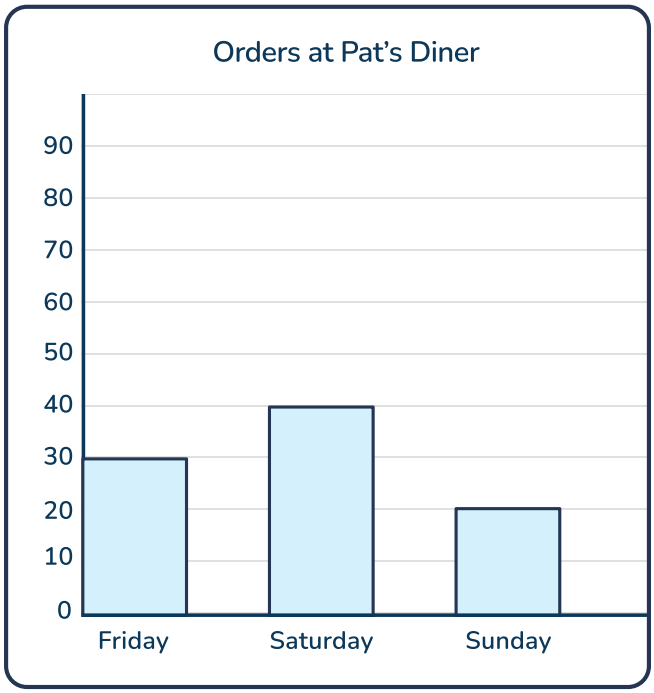
4 more students voted for blue since 9 students voted for blue and 5 students voted for green, the difference is 4 students.

Students must be able to read the bar graph and analyze the data to find the difference.

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Bar graphs

27. Look at the bar graph. How many total people ordered food at Pat's Diner over the weekend?



Answer:

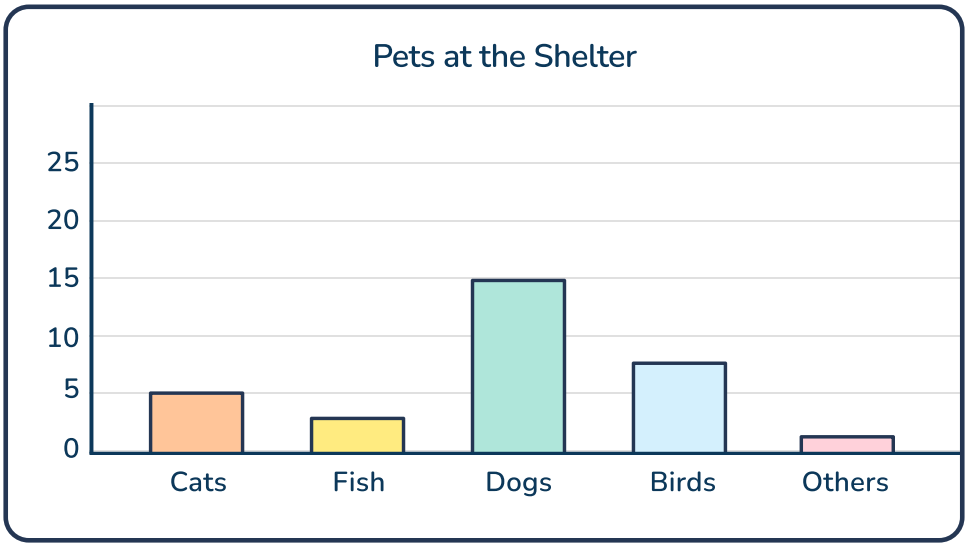
○ 90 people ordered food

2nd graders need to understand the scale on the graph. In this math problem, the scale is 10. Children should see there were 30 orders on Friday, 40 on Saturday and Sunday there were 20 and know to add those three values together.

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Bar graphs

28. How many fewer cats are there at the shelter than dogs? Use the bar graph below to answer the question.



Answer:

○ 10 fewer cats than dogs

2nd graders learn about the parts of a bar graph, including the:

- Scale
- Axis
- Title
- Labels

There is a lot of information provided about all the animals at the shelter, students must identify the information in the problem and then solve the problem using the information.

In this case, there are 5 cats at the shelter and 15 dogs, so the difference is 10.

You may also represent this bar graph horizontally.

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Sherwood Forest Elementary, Washington

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